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In re Application of:
Wiebe De Han

Title: Order of Titles

Serial No. 09/763,442

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

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Serial No. 09/763,442

Real party in interest

The real party of interest is the Assignee who is U. S. Philips Corporation, a corporation existing under the laws of the State of Delaware (hereinafter Appellant).

Related appeals and interferences

There are no related appeals or interferences to the present application that are known to appellants, the appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of the Claims

Claims 1-20 are drawn to a method and apparatus for recording an encoded bit stream representing a plurality of video objects comprising a sequence of cells together constituting a part of an MPEG2 Program Stream on a disc like record carrier. A copy of appealed claims 1-20 is contained in Appendix I following this brief.

Status of the Amendments After Final

A response was filed subsequent to the final rejection to overcome the Examiner's rejection of claims 1-20 under 35 U.S.C. §102(e). The Examiner in an Advisory Action dated October 19, 2005 indicated that the rejection of claims 1-20 under 35 U.S.C. §102(e) stands.

Summary of the Claimed Subject Matter

The appealed claims define subject matter for recording video, wherein the playable items and the list of playable items are defined in the order of allocation on the medium as discussed on page 2 of the specification lines 12-20. Briefly stated, by defining playable items and the list of playable items in the order they are allocated on the medium provides the user with a better understanding that playable items may be overwritten during recording.

Appealed claim 1 defines subject matter for a method of recording an encoded bit stream representing a plurality of video objects including a sequence of cells together constituting a part of an MPEG2 Program Stream, on a disc like record carrier, such as an optical disc, as a collection of contiguously arranged video objects (the definition of video object set VOBS on page 7, lines 25-26) in a video object storage area of said disc, as discussed on page 8, lines 18-21. Appealed claim 1 further defines recording management information in a management information area of said disc for storing information about recorded video objects, as discussed on page 8, lines 8-10. The collection is partitioned into adjacent recordings that represent playable titles as discussed on page 9, line 15-19.

Appealed claim 1 further defines subject matter for defining a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc as discussed in the specification on page 9, line 24-28. The generating of a list of titles sorted in the order of arrangement within the video object area on the disc is discussed in the specification from page 9, lines 24-33.

Appealed claim 6 defines subject matter for a recording apparatus as illustrated in Figure 7 for recording an encoded bit stream as shown in Figures 7 and 11 in drive unit 14 and discussed in the specification to the present invention on page 17, line 22-page 18, line 14. The encoded bit stream representing a plurality of video objects comprising a sequence of cells together constituting a part of an MPEG2 Program Stream, on a disc like record carrier, such as an optical disc (the definition of video object set VOBS on page 7, lines 25-26).

Appealed claim 6 further defines recording means illustrated in Figure 11 as drive unit 14 for recording a collection of contiguously arranged video objects in a video object storage area of the disc (specification page 8, lines 18-21) and for recording management information in a management information area of the disc for storing information about recorded video objects (page 8, lines 8-10) wherein the collection is partitioned into adjacent recordings that represent playable titles as discussed on page 9, line 15-19. Appealed claim 6 further

defines the recording apparatus as including system control means adapted to define a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc (as discussed in the specification on page 9, line 24-28) and to generate a title list of titles sorted in the order of arrangement within the video object area on the disc (specification from page 9, lines 24-33).

Appealed claim 7 defines subject matter for a recording apparatus according to claim 6, wherein the system control means are adapted to define a free space title that represents free space within the video object area and including the free space title in the title list as described in the specification on page 10, lines 1-8.

Appealed claim 8 defines subject matter for a recording apparatus according to claim 7, wherein the system control means are adapted to block free space titles for playback as described in the specification on page 11, lines 6-10.

Appealed claim 9 defines subject matter for a recording apparatus according to claim 8, wherein the system control means are adapted to convert a deleted title to a free space title as described in the specification on page 10, lines 1-8.

Appealed claim 10 defines subject matter for a recording apparatus according to claim 9, wherein the system control means are adapted to generate a title menu listing the titles in the same order as in the title table for allowing user access to the titles and the recording means comprises output means for displaying the title menu (as described in the specification on page 2, lines 15-26).

Appealed claim 14 defines subject matter for a recording apparatus according to claim 6, wherein the system control means further generate the title list of titles for both the playback sequence of all complete cells and the subset of complete cells as described in the specification on page 9, lines 24-28. The system control means are adapted to define a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc and to generate a title list of titles

sorted in the order of arrangement within the video object area on the disc (page 9, lines 24-28).

Appealed claim 15 defines subject matter for a recording apparatus according to claim 14, wherein the system control means generates a free space title representing free space within the video object area and including the free space title in the title list, deletes at least one of the playback sequence of all complete cells and converting the deleted sequence into the free space title, and wherein the free space title representing the deleted sequence includes the title for the subset of complete cells (page 10, lines 1-8).

Appealed claim 16 defines subject matter for a recording apparatus according to claim 15, wherein the system control means deletes multiple ones of the playback sequence of all complete cells, and converts all of the deleted ones of the playback sequences and the respective subsets of complete cells into a single free space title (page 10, lines 1-8).

Appealed claim 17 defines subject matter for a recording apparatus for recording an encoded bit stream as illustrated in Figure 7 for recording an encoded bit stream as shown in Figures 7 and 11 in drive unit 14 and discussed in the specification to the present invention on page 17, line 22-page 18, line 14. The encoded bit stream representing a plurality of video objects comprising a sequence of cells together constituting a part of an MPEG2 Program Stream, on an optical disc (the definition of video object set VOBS on page 7, lines 25-26). A recorder (illustrated in Figure 11 as drive unit 14) capable of recording a collection of video objects in a video object storage area of said disc (specification page 8, lines 18-21) and for recording management information in a management information area of said disc for storing information about recorded video objects (page 8, lines 8-10.), wherein said collection is partitioned into adjacent recordings that represent playable titles (page 9, line 15-19).

Appealed claim 17 further defines a controller adapted to define a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area

on the disc (page 9, line 24-28) and to generate a title list of titles sorted in the order of arrangement within the video object area on the disc, wherein each of the playback sequence of all complete cells and each of the subset of complete cells have their own title (page 9, lines 24-33).

Grounds of Rejection to be Reviewed on Appeal

The Advisory Action dated October 19, 2005 indicated that the rejections to claim 1-20 stand. Claims 1 through 20 are the appealed claims. Appealed claims 1-20 are rejected under the provisions of 35 U.S.C. §102(e) has been anticipated by U.S. Patent No. 5,719,937 issued in the name of Kashiwagi et al. (hereinafter referred to as *Kashiwagi et al.*).

Argument

The rejection of appealed claims 1-20 under the provisions of 35 U.S.C. §102(e) as being anticipated via over *Kashiwagi et al.*

A. The rejection under 35 U.S.C. S 102(e)

Appealed claims 1 through 20 stand rejected under the provisions of 35 U.S.C. §102(e) as being anticipated by *Kashiwagi et al.* (U.S. Patent No. 6,393,574). The examiner's position is that *Kashiwagi et al.* disclose every element defined by appealed claims 1-20.

The MPEP at §2131 states that current Patent Office practice abides by the courts opinion in *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) is quoted as stating that a "claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."

The MPEP at §2131 further quotes the courts opinion in *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) in stating that the "identical invention must be shown in as complete detail as is contained in the ... claim."

The MPEP at §2131 still further quotes the courts opinion in *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990) stating that the “elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required.”

B. The reference

Kashiwagi et al. (U.S. Patent No. 6,393,574) teach reproducing a bitstream having a non-sequential system clock (see Title; Abstract; and col. 1, lines 11-21). *Kashiwagi et al.* teach that the bitstream can be MPEG 2 data (see col. 2, lines 17-18) or contain multimedia data (see col. 10, lines 20-29). at col. 20, lines 17-60 to define the structure of the title content by describing the cell playback sequence. *Kashiwagi et al.* teach a video manger, VMG, which stores the title information for the entire disc (see col. 20, lines 10-12). *Kashiwagi et al.* at col. 20, lines 17-60 discuss playback titles. It should be notes that *Kashiwagi et al.* at col. 20, lines 17-60 or anywhere within the four corners of *Kashiwagi et al.*, do not disclose or suggest generating a title list of titles that are sorted in the order of arrangement within the video object area on the disc. It should further be noted that *Kashiwagi et al.* do not disclose or suggest defining a playable title list and generating a title list in the order of arrangement within the video object area on the disc. *Kashiwagi et al.* teach that the structure of the title is the cell playback sequence, not the arrangement within the video object area on the disc.

It should be noted that *Kashiwagi et al.* teach circumstances for seamless reproduction of cells (see Title, Abstract and claims 1 and 2). *Kashiwagi et al.* do not teach, disclose, suggest or in any way relate to crating a playback sequence in the order of allocation within the video object storage area on the disc. Furthermore, *Kashiwagi et al.* do not disclose or suggest generating a title list of titles sorted in the order of arrangement within the video object area on the disc. There is no disclosure or suggestion within *Kashiwagi et al.* for a playback sequence and a title list sorted in the order or arrangement within the video object area.

C. The differences between the invention and the reference

The rejection asserts that col. 20, lines 17-60 of *Kashiwagi et al.* teach that the title list is played back in accordance with the playback sequence as determined by the playback control information, done in order of arrangement in the video objects. The appellant, respectfully, points out that *Kashiwagi et al.* at col. 20, lines 17-60 teach defining the structure of the title content by describing the cell playback sequence. The appellant further points out that the defining a playable title list and generating a title list in the order of arrangement within the video object area on the disc are clearly distinguishable from defining the structure of the title content by describing the cell playback sequence.

The rejection of appealed claims 1-20 asserts that *Kashiwagi et al.* disclose all the elements of the rejected claims. Specifically, the rejection asserts that *Kashiwagi et al.* show a method of recording an encoded bit stream which is part of a MPEG2 stream, on a disc in Fig. 2, at col. 2, lines 17-18, and col. 10, lines 20-29. The rejection further asserts that *Kashiwagi et al.* disclose the recording of a collection of video objects in a video object storage area of a disc in Fig. 6B, col. 61, lines 51-57. The rejection states that *Kashiwagi et al.* disclose recording management information in a management information area of the disc is shown in Fig. 22.

The appellant, respectfully, points out that the appealed claims define a playable title as a playback sequence of cells of a recording in the order of allocation within the video object storage area on the disc, and generating a title list of titles sorted in the order of arrangement within the video object area on the disc. The Examiner's position is that *Kashiwagi et al.* disclose that playable titles are shown as a playback sequence of all completed cells or a subset of completed cells of a recording in Fig. 16, and described on Col. 20, lines 31-39. The Examiner states that *Kashiwagi et al.* in Fig. 16 discusses the generation of a title list and menu. The appellant, respectfully, points out that the appealed claims define "a playback sequence in the order of allocation within the video object storage area on the disc, and generating a title list of titles sorted in the order of arrangement within the video object area on the disc." The appellant further points out that the rejection does not assert that *Kashiwagi et al.* disclose or suggest a playback sequence in the order of allocation within the video object storage area on the

disc. The rejection further does not assert that *Kashiwagi et al.* disclose or suggest generating a title list of titles sorted in the order of arrangement within the video object area on the disc. The appellant, respectfully, asserts that *Kashiwagi et al.* do not disclose or suggest a playback sequence and a title list sorted in the order or arrangement within the video object area.

The appellant would like to draw the Board's attention to the MPEP at §2131 wherein the courts opinion in *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) is quoted as stating that a "claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." The appellant, respectfully, asserts that the rejection to the appealed claims does not set forth each and every element within the rejected claims, because simply put, the rejected claims require a playback sequence and a title list sorted in the order or arrangement within the video object area.

The appellant would further like to draw the Board's attention to MPEP at §2131 further quotes the courts opinion in *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) in stating that the "identical invention must be shown in as complete detail as is contained in the ... claim." The appellant asserts, as previously stated that the rejection does not address all the features of the rejected claims. The MPEP at §2131 further quotes the courts opinion in *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990) stating that the "elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required." The appellant respectfully asserts that the rejection does not arrange the elements as required by the rejected claims as required by current practice as stated within the MPEP and by the relevant case law.

Appealed claim 1

Appealed claim 1 defines subject matter for defining a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc, and generating a title list of titles sorted in the order of arrangement within the video object area on the disc.

Kashiwagi et al. at col. 20, lines 17-60 make no disclosure or suggestion for generating a title list of titles sorted in the order of arrangement within the video object area on the disc. *Kashiwagi et al.* teach that the structure of the title is the cell playback sequence, not the arrangement within the video object area on the disc.

Appealed claim 2

Appealed claim 2 defines the subject matter of appealed claim 1, characterized by defining a free space title that represent free space within the video object area and including the free space title in the title list. There is no disclosure or suggestion within *Kashiwagi et al.* for defining a free space title that represent free space within the video object area and including the free space title in the title list.

Appealed claim 3

Appealed claim 3 defines the subject matter of appealed claim 2, characterized by blocking free space titles for playback. There is no disclosure or suggestion within *Kashiwagi et al.* for blocking free space titles for playback.

Appealed claim 4

Appealed claim 4 defines the subject matter of appealed claim 3, characterized by converting a deleted title to a free space title. There is no disclosure or suggestion within *Kashiwagi et al.* for by converting a deleted title to a free space title.

Appealed claim 5

Appealed claim 5 defines the subject matter of appealed claim 4, characterized by generating a title menu listing the titles in the same order as in the title table for allowing user access to the titles. There is no disclosure or suggestion within *Kashiwagi et al.* for generating a title menu listing the titles in the same order as in the title table for allowing user access to the titles.

Appealed claim 6

Appealed claim 6 defines the subject matter for a recording apparatus to define a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc and to generate a title list of titles sorted in the order of arrangement within the video object area on the disc. There is no disclosure or suggestion within *Kashiwagi et al.* for defining a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc and to generate a title list of titles sorted in the order of arrangement within the video object area on the disc.

Appealed claim 7

Appealed claim 7 defines the subject matter of appealed claim 6, characterized in that the system control means are adapted to define a free space title that represents free space within the video object area and including the free space title in the title list. There is no disclosure or suggestion within *Kashiwagi et al.* for the system control means to be adapted to define a free space title that represents free space within the video object area and including the free space title in the title list.

Appealed claim 8

Appealed claim 8 defines the subject matter of appealed claim 7, characterized by the system control means being adapted to block free space titles for playback. There is no disclosure or suggestion within *Kashiwagi et al.* for the system control means to be adapted to block free space titles for playback.

Appealed claim 9

Appealed claim 9 defines the subject matter of appealed claim 8, characterized in that the system control means are adapted to convert a deleted title

to a free space title. There is no disclosure or suggestion within *Kashiwagi et al.* for the system control means to be adapted to convert a deleted title to a free space title.

Appealed claim 10

Appealed claim 10 defines the subject matter of appealed claim 9, characterized in that the system control means are adapted to generate a title menu listing the titles in the same order as in the title table for allowing user access to the titles and the recording means comprises output means for displaying the title menu. There is no disclosure or suggestion within *Kashiwagi et al.* for the system control means are adapted to generate a title menu listing the titles in the same order as in the title table for allowing user access to the titles and the recording means comprises output means for displaying the title menu.

Appealed claim 11

Appealed claim 11 defines the subject matter of appealed claim 1, wherein generating the title list of titles further includes generating titles for both the playback sequence of all complete cells and the subset of complete cells. There is no disclosure or suggestion within *Kashiwagi et al.* for generating the title list of titles to further include generating titles for both the playback sequence of all complete cells and the subset of complete cells.

Appealed claim 12

Appealed claim 12 defines the subject matter of appealed claim 11, wherein generating the title list of titles further including defining a free space title that represent free space within the video object area and including the free space title in the title list, deleting at least one of the playback sequence of all complete cells and converting the deleted sequence into the free space title and wherein the free space title representing the deleted sequence includes the title for the subset of complete cell. There is no disclosure or suggestion within *Kashiwagi et al.* for defining a free space title that represent free space within the video object area and

including the free space title in the title list, deleting at least one of the playback sequence of all complete cells and converting the deleted sequence into the free space title and wherein the free space title representing the deleted sequence includes the title for the subset of complete cell.

Appealed claim 13

Appealed claim 13 defines the subject matter of appealed claim 12, wherein generating the title list of titles includes deleting multiple ones of the playback sequence of all complete cells and converting all of the deleted ones of the playback sequences and the respective subsets of complete cells into a single free space title. There is no disclosure or suggestion within *Kashiwagi et al.* for generating the title list of titles includes deleting multiple ones of the playback sequence of all complete cells and converting all of the deleted ones of the playback sequences and the respective subsets of complete cells into a single free space title.

Appealed claim 14

Appealed claim 14 defines the subject matter of appealed claim 6, wherein the system control means further generate the title list of titles for both the playback sequence of all complete cells and the subset of complete cells. There is no disclosure or suggestion within *Kashiwagi et al.* for the system control means to generate the title list of titles for both the playback sequence of all complete cells and the subset of complete cells.

Appealed claim 15

Appealed claim 15 defines the subject matter of appealed claim 14, wherein the system control means generates a free space title representing free space within the video object area and including the free space title in the title list, deletes at least one of the playback sequence of all complete cells and converting the deleted sequence into the free space title, and wherein the free space title

representing the deleted sequence includes the title for the subset of complete cells. There is no disclosure or suggestion within *Kashiwagi et al.* for the system control means to generate a free space title representing free space within the video object area and including the free space title in the title list, deletes at least one of the playback sequence of all complete cells and converting the deleted sequence into the free space title, and wherein the free space title representing the deleted sequence includes the title for the subset of complete cells.

Appealed claim 16

Appealed claim 16 defines the subject matter of appealed claim 15, wherein the system control means deletes multiple ones of the playback sequence of all complete cells, and converts all of the deleted ones of the playback sequences and the respective subsets of complete cells into a single free space title. There is no disclosure or suggestion within *Kashiwagi et al.* that the system control means deletes multiple ones of the playback sequence of all complete cells, and converts all of the deleted ones of the playback sequences and the respective subsets of complete cells into a single free space title.

Appealed claim 17

Appealed claim 17 defines subject matter for a recording apparatus including a controller adapted to define a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc and to generate a title list of titles sorted in the order of arrangement within the video object area on the disc, wherein each of the playback sequence of all complete cells and each of the subset of complete cells have their own title. There is no disclosure or suggestion within *Kashiwagi et al.* for a controller adapted to define a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc and to generate a title list of titles sorted in the order of arrangement within the video object area

on the disc, wherein each of the playback sequence of all complete cells and each of the subset of complete cells have their own title.

Appealed claim 18

Appealed claim 18 defines the subject matter of appealed claim 17, wherein the controller is adapted to define a free space title that represents free space within the video object area and including the free space title in the title list. There is no disclosure or suggestion within *Kashiwagi et al.* for the controller being adapted to define a free space title that represents free space within the video object area and including the free space title in the title list.

Appealed claim 19

Appealed claim 19 defines the subject matter of appealed claim 17, wherein the controller is adapted to block free space titles for playback. There is no disclosure or suggestion within *Kashiwagi et al.* for the controller to be adapted to block free space titles for playback.

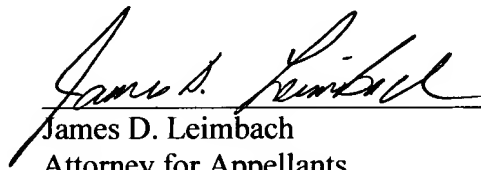
Appealed claim 20

Appealed claim 20 defines the subject matter of appealed claim 17, wherein the controller is adapted to convert a deleted title to a free space title. There is no disclosure or suggestion within *Kashiwagi et al.* for the controller to be adapted to convert a deleted title to a free space title.

Conclusion

In summary, the examiner's rejections of the claims are believed to be in error for the reasons explained above. The rejections of each of claims 1-20 should be reversed.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "James D. Leimbach", is written over a horizontal line.

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APPENDIX 1. Claims on Appeal

1. A method of recording an encoded bit stream, said encoded bit stream representing a plurality of video objects comprising a sequence of cells together constituting a part of an MPEG2 Program Stream, on a disc like record carrier, such as an optical disc, said method comprising:

recording a collection of contiguously arranged video objects in a video object storage area of said disc,

recording management information in a management information area of said disc for storing information about recorded video objects, wherein

said collection is partitioned into adjacent recordings that represent playable titles

characterized by,

defining a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc, and

generating a title list of titles sorted in the order of arrangement within the video object area on the disc.

2. A method according to Claim 1, characterized by defining a free space title that represent free space within the video object area and including the free space title in the title list.

3. A method according to Claim 2, characterized by blocking free space titles for playback.

4. A method according to Claim 3, characterized by converting a deleted title to a free space title.

5. A method according to Claim 4, characterized by generating a title menu listing the titles in the same order as in the title table for allowing user access to the titles.

6. A recording apparatus for recording an encoded bit stream, representing a plurality of video objects comprising a sequence of cells together constituting a part of an MPEG2 Program Stream, on a disc like record carrier, such as an optical disc, the recording apparatus comprises:

recording means for recording a collection of contiguously arranged video objects in a video object storage area of said disc and for recording management information in a management information area of said disc for storing information about recorded video objects, wherein said collection is partitioned into adjacent recordings that represent playable titles,

characterized in that, the recording apparatus comprises:

system control means adapted to define a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc and to generate a title list of titles sorted in the order of arrangement within the video object area on the disc.

7. A recording apparatus according to Claim 6, characterized in that, the system control means are adapted to define a free space title that represents free space within the video object area and including the free space title in the title list.

8. A recording apparatus according to Claim 7, characterized in that, the system control means are adapted to block free space titles for playback.

9. A recording apparatus according to Claim 8, characterized in that, the system control means are adapted to convert a deleted title to a free space title.

10. A recording apparatus according to Claim 9, characterized in that, the system control means are adapted to generate a title menu listing the titles in the same

order as in the title table for allowing user access to the titles and the recording means comprises output means for displaying the title menu.

11. A method according to Claim 1, wherein generating the title list of titles further comprises generating titles for both the playback sequence of all complete cells and the subset of complete cells.

12. A method according to Claim 11, wherein generating the title list of titles further comprises:

defining a free space title that represent free space within the video object area and including the free space title in the title list;

deleting at least one of the playback sequence of all complete cells and converting the deleted sequence into the free space title; and

wherein the free space title representing the deleted sequence includes the title for the subset of complete cells.

13. A method according to Claim 12, wherein generating the title list of titles further comprises:

deleting multiple ones of the playback sequence of all complete cells; and

converting all of the deleted ones of the playback sequences and the respective subsets of complete cells into a single free space title.

14. A recording apparatus according to Claim 6, wherein the system control means further generate the title list of titles for both the playback sequence of all complete cells and the subset of complete cells.

system control means adapted to define a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc and to generate a title list of titles sorted in the order of arrangement within the video object area on the disc.

15. A recording apparatus according to Claim 14, wherein the system control means generates a free space title representing free space within the video object area and including the free space title in the title list, deletes at least one of the playback sequence of all complete cells and converting the deleted sequence into the free space title, and wherein the free space title representing the deleted sequence includes the title for the subset of complete cells.

16. A recording apparatus according to Claim 15, wherein the system control means deletes multiple ones of the playback sequence of all complete cells, and converts all of the deleted ones of the playback sequences and the respective subsets of complete cells into a single free space title.

17. A recording apparatus for recording an encoded bit stream, representing a plurality of video objects comprising a sequence of cells together constituting a part of an MPEG2 Program Stream, on an optical disc, comprising:

a recorder capable of recording a collection of video objects in a video object storage area of said disc and for recording management information in a management information area of said disc for storing information about recorded video objects, wherein said collection is partitioned into adjacent recordings that represent playable titles; and

a controller adapted to define a playable title as a playback sequence of all complete cells or a subset of complete cells of a recording in the order of allocation within the video object storage area on the disc and to generate a title list of titles sorted in the order of arrangement within the video object area on the disc, wherein each of the playback sequence of all complete cells and each of the subset of complete cells have their own title.

18. A recording apparatus according to Claim 17, characterized in that, the controller is adapted to define a free space title that represents free space within the video object area and including the free space title in the title list.

19. A recording apparatus according to Claim 17, characterized in that, the controller is adapted to block free space titles for playback.

20. A recording apparatus according to Claim 17, characterized in that, the controller is adapted to convert a deleted title to a free space title.